

AMERICAN  
RAILROAD JOURNAL,  
AND  
ADVOCATE OF INTERNAL IMPROVEMENTS.

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                                      } PROPRIETORS.]

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AMERICAN RAILROAD JOURNAL.

NEW-YORK, MARCH 24, 1838.

We are indebted to A. H. Wilson, Esq., for the Reports of the Canal Commissioners, of Pennsylvania, and of the Committee on the Gettysburgh Railroad.

Also, to Col. Childs, J. E. Bloomfield, and E. F. Johnson, Esqrs., for Legislative Documents, and to Joseph D. Allen, for Report to the Oswego and Utica Railroad Co.

Also, to Mr. Morton, for his Report to the Directors of the Cleaveland, Warren and Pittsburgh Railroad Co.

See Notice to Contractors, by the Chief Engineer of the James River and Kanawha Company, Va., among the Advertisements.

TO SUBSCRIBERS.

Before the end of the present month, we intend to lay before our Subscribers the first number of a new volume.

As we desire to introduce considerable improvements into the new volume, we most earnestly call upon all our subscribers to remit upon the receipt of the first number.

To those indebted for past years, we must decline sending. It is but a sorry compliment to subscribe for, and read the Journal, without paying for even the paper.

To those of our friends who have done their part, we return our sincere thanks, and beg them to consider the completion of the present volume, at a

considerable disadvantage, as our guarantee for the future performance of our duty.

WATER COMMISSIONERS' REPORT.

We have delayed the publication of this voluminous Report, until we should be able to do it justice. Owing to its great length, and the importance of the subject, we prefer giving it to our readers in as short a compass as possible, which we shall be able to do in two or three numbers more.

We exceedingly regret that the discussion on this subject in our daily papers has been, in some instances, of a very personal and unfair character.

We do not object to the fair criticism of an Engineer's plans—but roundly to deny his capability or experience, contrary to the fact, is most unwarrantable.

DEATH OF BOWDITCH.

It is with feelings of the deepest regret that we announce the death of this distinguished man. Of the merits of Dr. Bowditch, as a mathematician, it is needless to inform our readers. His labors in both the practical and the theoretical departments of the science are well known.

His translation of, and commentary upon the "*Mecanique Celeste*" remains unfinished—a monument of his high talent not likely to be completed by another hand.

Dr. B. died at his residence in Boston, on Friday, the 16th instant. We are not informed as to the nature of his complaint.

RAILROADS IN CHURCHES.

It is remarked by Chevalier that the Americans are emphatically a people for Railroads. When he entered the cabin of the packet at Liverpool, the first American paper that caught his eye was the "*Railroad Journal*." During

his sickness, which lasted through the voyage, he says, he remembers of the conversation on board only the word "*Railroad*." When he arrived in New-York, he was shown among other things, a "*Marine Railroad*," for hauling up ships for repair. In the lead mines in Pennsylvania, he saw a "*Railroad*" under ground. At a Southern Manufactory of a very extensive character, one of the chief curiosities, was a "*Railroad suspended in the air*" (after the manner of those used in some of our large printing establishments, for transportation from the higher stories of one building, to those of another). When he visited one of the prisons, in Philadelphia, we believe, after having gone the rounds, the overseer exclaimed, "but you have not yet seen my "*Railroad*."

Railroads in churches had not yet been imagined, certainly not introduced, or the quick observation of Mons. Chevalier would have discovered them. They are, undoubtedly, an invention of a date later than the visit of Mons. C. to this country.

Not to exhaust the patience of our readers, we should say that the Railroad the subject of our notice is located in the chancel of St. Peter's Church, in this city, and is used for moving the pulpit from before the altar, to a place provided at one side, and out of the way of the other services.

The operation is performed with the utmost ease, while it prevents the one-sided, and to us unpleasant, permanent location of the pulpit, in most Catholic Churches.

While on the subject, we must not neglect the opportunity to do justice to the perfect neatness and good taste displayed in the design of St. Peter's. The exterior is not quite completed. The interior, for chasteness and correct proportion, is without a rival in this city. It requires some art to fill up a space of

eight thousand superficial feet, without leaving voids, or overloading with ornament in any part. The organ, built by Mr. Henry Erben, of this city, is the largest we have in New-York, and is so powerful as to fill this immense building with ease.

We understand that another church in this city has a Railroad, and that the pulpit on it is a locomotive, as *no primum mobile* can be discovered while it is in motion.

#### BENNET'S STEAMBOAT.

We understand that Mr. Bennet has completed the alteration in the valves of his new steamboat, and has met with such success as to encourage his highest expectations. We have been informed of the result of a very satisfactory trial, but do not wish to make any statements, as Mr. Bennet intends in a few days to invite a critical examination, which will give results in a form more generally useful, than those derived from a partial trial.

This is right—Mr. B. knows what can be done; all he asks is fair play, and an impartial trial. We wish all manner of success to such ready ingenuity and indomitable perseverance, as he possesses, in whatever way he may choose to show it.

#### LAST NUMBER OF THE PRESENT VOLUME.

Our readers are reminded that this is the last number of the volume for the year 1837. We have, at much cost and pains, succeeded in fulfilling our engagements to our subscribers. We wish them to do the same for us.

Hereafter, the American Railroad Journal will be published semi-monthly, in a large octavo form, including an extra advertising cover, independent of the usual quantity of matter. The work will thus contain as much matter, when bound, as heretofore.

The Mechanic's Magazine, which we formerly published, contained only a certain portion of the matter of the Railroad Journal. The work in that form is discontinued. Subscribers who have paid for the year, will be supplied with the Railroad Journal, to complete their year—after which time we intend to publish but the one work; subscriptions Five Dollars a year, payable in advance.

In asking the indulgence of our readers, for the delay in completing this volume, we need but remind them of the

trial of the past year to excite their sympathy.

We are doing every thing in our power to make the next volume highly interesting and useful, both to the practical and scientific man. No pains will be spared in obtaining the latest and best information in our own country and abroad.

Our foreign papers and journals enable us to give our readers such information as cannot be obtained in any other way, unless at a great cost—while in our own country, our friends do not often give us time to enquire after Reports, at least, before they are on our table.

But we would particularly invite the attention of Manufacturers to the Journal, as the best means of communicating the results of their respective establishments. Whenever anything worthy of notice is offered, we will make it our particular business personally to attend and examine it.

But while we are devoting time and labor to the advancement of internal improvements, we must remind our readers that we incur heavy expenses, and it is consequently necessary that they should be punctual in their remittances. "A word to the wise—"

We commend our readers to the following article as containing some notions on the subject of railroads. We desire to see more from New England.

#### RAILROADS IN NEW ENGLAND.

An impression exists, to some extent, that Railroads are not fitted for the Eastern States, or at all events, that they are not as necessary or as profitable as in other parts of the country. This impression is, we are satisfied, entirely erroneous, and as it is one which has a very important bearing upon the prosecution of these works in the New England States, especially upon their receiving the countenance of the Legislatures of those States, I deem it proper to occupy some space in showing how entirely unfounded is this idea.

First, It is notorious that there is no part of the country as populous as New England. Its whole territory is studded with villages and cultivated farms, and a Railroad passing through the heart of such a region as this for any considerable distance, must receive a very large amount of local support.

Second, There is no section of country where in the same distance the amount of articles to be transported is so great. Without considering the large amounts of building and flagging stone, ship timber, &c. &c., the supply of then umerous

manufacturing villages, with the raw material for manufacture, and the many articles for consumption by the operatives, and the transportation of the manufactured article, affords a very large business to a railroad passing through a country abounding in manufacturing establishments.

Third, A New England population is eminently a *travelling* population. They are constantly in motion, and are always ready to avail themselves of any improved mode of intercourse, and that portion of population connected with manufacturing establishments, are peculiarly locomotive in their character.

Fourth, Although the face of the country is generally very rough and uneven, yet it is practicable often by pursuing the valleys of rivers to obtain as favorable a route as in any portion of the West, both in point of elevation and curvature.

Fifth, The main support of any Railroad passing for any considerable distance through a populous country with a large amount of articles to be transported, must be derived from the business upon its borders. The common opinion on this subject is altogether erroneous, as experience in other modes of conveyance has most fully shown. On the Erie Canal, as appears by official returns to the year 1828, the receipts of the transportation of goods, and passengers carried only a portion of the distance between Albany and Buffalo, were thirty-nine fortieths of the whole receipts—that is, only one fortieth part of the receipts were for persons or goods passing through the entire line of the Canal. And on the Hudson river, it is an ascertained fact that there are very many more passengers who go only a part of the way in steamboats between Albany and New-York, than through from one of those cities to the other. Of the passengers on board the New-York and Providence steamboats, not one half, as we are informed, pass over the Providence and Boston Railroad; the number to, and from Providence, and the interior, being greater than the number passing between Boston and New York. Facts of this kind might be multiplied indefinitely, all showing that the border support, the local business, is the most valuable from its certainty, and most important in amount.

Sixth, As the business upon all Railroads increases *geometrically*, as you add to its length, it is of course important that these roads should be extended through a large tract of country: such will be the case in New England. Already from Boston the Railroads are extending rapidly East, and South by way of the Providence and Stonington Railroads, and the Worcester Railroad, and the Norwich Road, (rapidly constructing,) to Long Island Sound, and all these connected with each other, and by means of the Western Railroad from Worcester to Albany, with the great avenues at the



West. So that each one of these Railroads is a part of a long line of communication, and will enjoy all the benefits of such a connection.

As an illustration of the peculiar advantages attending the construction of Railroads in New England, and in proof of the statements above made, I will advert to a road not yet completed, (although far advanced and in the course of rapid construction,) and therefore not universally known.

The Norwich and Worcester Railroad extends from the steamboat navigation of the Thames at Norwich to Worcester, a distance of 59 miles. In this whole route there is no inclination exceeding 20 feet to the mile, and the road is very easily constructed and at moderate expense. Within five miles of the route between Norwich and Worcester, excluding those two towns, there are 75 cotton mills, 27 woollen mills, and numerous manufactories of iron, paper, &c. By official returns collected under the authority of the state, and just published, it appears that there are in the county of Worcester, into the heart of which this road runs, 74 cotton mills, with 124,720 spindles, making goods annually of the value of \$1,991,024; 66 woollen mills with 160 sets of machinery, manufacturing 3,748,852 lbs. of wool into 2,740,467 yards of cloth, worth \$3,695,321. Also the enormous sum of \$2,791,298 the value of boots and shoes annually manufactured; \$387,038 the value of hides tanned; \$321,100 in chairs and cabinet furniture; \$411,554 in palm leaf hats; \$118,971 in straw bonnets; \$331,200 in machinery and various other manufactured articles, amounting in the whole to more than \$12,000,000. Indeed, in the counties of New London and Windham, in Connecticut, through the heart of which this railroad passes, and the county of Worcester in Massachusetts, there are not less than 230 cotton and woollen mills, besides very numerous manufactures of other kinds, in the aggregate of even greater value.

But this is not all, at Worcester this railroad connects with the Boston and Worcester Railroad, and a large number of manufacturing establishments are near that road, and a portion of their business would take this route to New-York.—What is however more important, this connection furnishes a route between Boston and New-York as expeditious and pleasant as any other. From Boston to Norwich is 102 miles, and thence to New-York 130, by steamboat. The time from Boston to New-York, by this route, will be fourteen or fifteen hours.

Again, from Worcester a route has been surveyed for a railroad to Nashua, N. H., and been found to be exceedingly favorable. The distance is 40 miles, and no elevation is greater than 33 feet to a mile, and a great portion entirely level. This will open an entirely new course of travel and transportation, not only from Nashua and the intermediate points, but even from Lowell, this is a few miles the

nearest, and by far the best route to New York, as there will be but one transshipment, and that at Norwich on board a steamboat. Of the immense business of Lowell nothing need be said, farther than that from these same official returns, it appears that aside from articles of transportation from all other sources, the cotton manufactured and cotton goods, wools and woollen goods, anthracite coal used in the cotton and woollen mills, and iron and coal in the manufacture of machinery, are together equal to 29,350 tons annually. It is apparent also, that passengers and goods from New Hampshire, destined for New-York would, on arriving at Nashua, find this far the shortest, cheapest, and best route to that city.

By its connection with the great Western Railroad at Worcester, on the completion of that road, (which is now put beyond a doubt,) a communication is at once opened with Albany and the West, forming a most important connection, mutually beneficial to both roads.

A slight examination of the map will show the importance of this road and its connexions, and in view of these facts, and in the further fact, that it is ascertained that it will cost less than one half as much per mile as any other road heretofore constructed in New England, I would enquire in what respect any Railroad at the West is superior to this, or where one is to be found out of New-England uniting so many advantages?

I make these remarks in reference to the Norwich and Worcester Railroad, not for the purpose of making any invidious comparison between that road and any other in New England, but because I am best acquainted with the facts in relation to it.

#### NEW ENGLAND.

##### THE RAILROAD STEAMER.

BY JAMES JOHNSON, M. D.

Were any of the ancients to rise from their tombs, and to behold a steam ship, full of passengers, darting up the Thames, or a train of carriages, with a thousand people flying along a Railroad, at the rate of thirty miles an hour, they would be very apt to doubt the fact of their revisit to the same planet they had left—since a thousand years in the grave may probably seem no longer than a short siesta after dinner. Their surprise would not be much lessened by the sight of a brilliant flame springing up from the middle of a street, or issuing from ten thousand metallic tubes, and turning the darkness of night into the glare of day! If, while gazing at these phenomena, they saw a man, or even a monkey, descend from the clouds suspended as the pendulum of a huge umbrella, they would no longer doubt that they had got into "another if not a better world" than that of their birth and death.

But to return to the RAILROAD STEAMER. Without rudder or rein—without tug or tow-rope—without chart or com-

pass—without impulse from MAN, or traction from BEAST—this maximum of power in minimum of space—this magic AUTOMATON darts forward on iron pinions, like an arrow from a bow, along its destined course. Devised by science, but devoted to industry—harmless as a dove, if unopposed; but fatal as a thunderbolt if obstructed in its career—this astonishing offspring of human invention—this giant in strength, though a dwarf in stature, drags along, apparently without effort, whole cargoes of commerce—merchants and their merchandize, artisans and their arts, travellers and their traffic, tourists and their tours, (some of them heavy enough)—in short, every thing that can be chained to the tail of this Herculean velocipede!

The steam carriage nearly annihilates distance between inhabitants of a state, and thereby converts, as it were, a whole country into a city, securing all the good effects of combination and concentration, without the detrimental consequences of a crowded population. By the Railroad, Liverpool, Manchester, Birmingham, and the Metropolis, are constituted *contiguous* cities, while wide and fertile tracts of country intervene! Thus STEAM multiplies the product of human labor, by increasing their sale and diminishing their price. It will enable us to convert millions of acres from pasturage into corn-fields, and consequently the provender of horses into food for man.

The whole transit of a RAILROAD STEAMER is a series of miracles, which, in former days, would have been attributed to angels or demons. At starting, the mighty automaton suddenly suppresses his torrent of hissing steam, and belches forth a deep and hollow cough, which is reiterated at shorter and shorter periods, like a huge animal panting for breath, as the engine, with its train, labors up the Euston square. These belchings more nearly resemble the panting of a lion or tiger than any other sound that I know of. With a slow motion, on any considerable ascent, the breathing of the animated machine appears to become more laborious, and the explosion more distinct, till at length the animal seems exhausted, and groans, as it were, under the tremendous effort. But the engine, having mastered the difficulty, acquires velocity before it plunges into the dark abyss of the tunnel under Primrose hill. There the peal of thunder—the sudden immersion into cimmerian darkness—the clash of reverberated sounds in confined space—the atmospheric chill that rushes over the frame—all combine to induce a momentary shudder at the thought of some possible collision or catastrophe in this subterranean transit, which is increased rather than diminished by the gleams of dubious light that occasionally break in from above, or the sparks of fire that issue every instant from the chimney, rendering "darkness visible." On emerging from the gloomy and gelid cavern, every thing appears of



dazzling brightness, and we breathe with delight the pure atmosphere of Heaven.

The moment the highest point of elevation on any part of the road is gained, and a descent commences, the engine with its long train, starts off with augmenting velocity, dashing along like lightning, and with a uniform growl or roar, like a continuous discharge of distant artillery or thunder. The scene is now grand—I had almost said terrific. Although it may be a complete calm, the wind appears like a hurricane; and, while the train is flying along the raised embankments, as near Waterford, it is impossible not to feel some sense of danger, or an apprehension that some unexpected impediment may hurl the whole cavalcade into the yawning gulf below!

The meeting of the trains flying in opposite directions are scarcely less agitating to the nerves than the transit through the tunnels. The velocity of their course—the propinquity, or apparent identity of the iron trajets along which these hissing meteors move, raise the involuntary but frightful thought of a possible collision, with all its horrible consequences! The period of suspense, however, is but momentary. An electrifying concussion, as it were, of sense, sight, and sound takes place, and, in a few seconds, the object of terror is out of view behind.

But such Herculean labor cannot be carried on in so small a compass, without great expenditure. The AUTOMATON thirsts—he knows the place of refreshment—utters a loud and piercing whistle or note of preparation—slackens his pace—halts at the fountain, and ingurgitates a deluge of water to quench his burning draught. In five minutes he is able to renew his gigantic task!

The steam-shriek is a new phenomenon on the railroad, and a very startling one it is. By opening a small valve in the boiler, a volume of steam is driven with tremendous force and velocity, through a narrow aperture, in imitation of a throat, causing a shrill shriek, unlike the voice of man, or any known animal, but so loud as to be heard two miles off. It is a most unearthly yell, or scream, or whistle, which was compared by a distinguished poet, who sat beside me,\* to the cry of some monstrous animal while being gored to death. It forms an excellent alarm, to clear the road for the train, and apprise those at the stations, that the engine approaches.

The railroad travelling possesses many peculiarities, as well as advantages, over the common mode of conveyance. The velocity with which the train moves through the air is very refreshing, even in the hottest weather, where the run is for some miles. The vibratory, or rather oscillatory motion communicated to the human frame, is very different from the jolting and swinging motions of the stage-coach, and is productive of more salutary effects. It equalizes the circulation,

\* Campbell.

promotes digestion, tranquilizes the nerves, (after the open country is gained,) and often causes sound sleep during the succeeding night, the exercise of this kind of travelling being unaccompanied by that lassitude, aching, and fatigue which, in weakly constitutions, prevents the nightly repose. The railroad bids fair to be a powerful remedial agent in many ailments to which the metropolitan and civic inhabitants are subject.

To those who are curious, and not very timid, the open carriages are far preferable to the closed ones, especially in fine weather. In bad weather, and particularly at first, invalids may travel with more advantage under cover. I have no doubt, that to thousands and tens of thousands of valetudinarians in this overgrown Babylon, the run to Boxmoor, or Tring and back, twice or thrice a week, will prove a means of preserving health and prolonging life, more powerful than all the drugs in Apothecaries' Hall.

In fine, a man may travel from the pole to the equator—

"A Gadibus usque ad Gangem,"

without seeing any thing half so astonishing as the wonders of the railroad. The pangs of *Ætna*, and the convulsions of the elements excite a feeling of horror and terror, without any thing of pride. The magic—the miracles of the railroad engender an exulting consciousness of superiority in the genius of man, more intense and conclusive than any effort of poet, painter, or philosopher.

The railroad journey, however, is not without its inconveniences, many of which may be prevented by a little ingenuity. The greatest is the discharge of cinders, some of them ignited, from the chimney, which are not only disagreeable but occasionally dangerous to the eyes of those in the open carriages. This might be prevented by an awning—a protection which is adopted on some railroads, and one that must ultimately be adopted on all. It is a protection from the elements of fire and water which every company is bound to afford to the passengers, and is attended with trifling expense. Till then, glasses or a veil are the necessary guards for the eyes.

The transits of the tunnels, in hot weather, causing a sudden vicissitude of temperature, to the extent of 20 degrees of the thermometer, or thereabouts, require some precaution on the part of sensitive invalids. A shawl or large handkerchief, thrown over the head is a sufficient protection, and those who do not take this measure, should keep their eyes shut during the passage, since sparks and cinders are unavoidably thrown in closer showers over the passengers here than in the open space.

To speculate on the moral, physical, political and economical effects and consequences of railroads and steam navigation, when carried to their full extent is beyond my province—perhaps beyond the bounds of human foresight. If the semi-civilized peasants of the remotest

isles of the Hebrides, of Orkney, and of Shetland can even now, transmit, in a few hours the produce of their huts, their mountains, their moors, and their farm yards, to the markets of Glasgow and Edinburgh, so as in three or four days to pay the annual rents of their tenements and wildernesses, what may we not expect from the extension and perfection of this facility of intercommunication? In days of yore, the imponderable products of the intellect travelled as slowly as the material merchandize of mankind. They will now be diffused, from the centre to the periphery—from the remotest outlines to the foci of society, with a rapidity little less than that of *thought* itself!! The ultimate consequences cannot be appreciated at present; but we may safely conclude that the benevolent Author of our existence did not endow the mind of MAN with such extraordinary powers of invention, without the design of final advantage to his physical wants, his social relations, and his spiritual nature.—*From the Medico Chirurgical Review, and Journal of Practical Medicine.*

#### FUEL COAL, &c.

In this climate, a supply of fuel is of the first necessity; without it, the country could not be inhabited. Hitherto, the forests have afforded this supply, and will continue to do so, for years to come. But the time will arrive, when we must look to other sources, for this indispensable article. The remark has often been made, that Western New-York is one of the most favored portions of the earth; the climate, the soil, the beautiful surface, the lakes, the water power, the saline springs, and various other natural advantages combined, with the improvements of art, render it one of the most desirable lands for the residence of an enlightened and happy people. Confining our view to this immediate vicinity, and marking the rapid destruction of the forests, we should find reasons to apprehend that the inhabitants of this beautiful land must, in progress of time, suffer great inconvenience from the want of that supply of fuel, which the temperature of the climate demands, as a necessary of life; unless, indeed, the people should turn their attention to the preservation and culture of trees, as they have done in some parts of Europe, particularly in Great Britain. This undoubtedly would be in our climate, too uncertain; and beside, when the plains and gentle slopes of the country are once brought into cultivation, it would be too unprofitable to convert them again into forests. No reason but the necessity of the case, can justify the farmer in retaining any large portion of his land in an unproductive state. If the whole country were cultivated, it requires no sagacity to discover, that its exports would be greatly increased, and of course, the value of farms enhanced to a corresponding extent.

The Legislature have directed that the persons employed to take the State Cen-



ous, shall ascertain the quantity of improved land in the several towns. It is supposed the town of Seneca presents about a fair average of improved land among the old towns of Ontario County. By the census of 1825, the whole quantity of land in the town is 46,100 acres, of which 24,676 were improved, and 21,424 unimproved. The census of 1835 does not throw any light on this inquiry, but every one conversant with the country knows that the quantity of improved land now is greater than in 1825. If the same rule in taking the enumerations every ten years was adhered to, the result would show, with some approach to certainty, how long the forests in this town, keeping in view their increase by natural growth, would supply the inhabitants with fuel and timber for other uses.

Is it unreasonable to suppose that one-fourth part of the land in this town is now in woods? If that be assumed as the proportion, we have now about 11,500 acres of wood land; which, at 60 cords to the acre, would afford 690,000 cords of wood. In 1835, the town of Seneca, including the village or Geneva, contained 6,608 inhabitants, divided into about 1,100 families; allowing each family to consume 30 cords of wood annually, (and which is thought by some to be below the average,) and the whole of the present stock of timber would be consumed in 21 years, except as it might be restored by natural growth; and what the increase of maple, beech, and oak timber, such as generally grows in this town, may be estimated at, others better informed can decide.

It is not presumed that this estimate is correct. Enough to say, that judicious men think it so near the truth, as to be worth throwing before the public, that minds better informed on the subject, may be called to it, while there is time and opportunity for its consideration.

Reflection upon it at this time, will produce a general benefit. Even if men should become convinced that the forests cannot supply, at the present rate of consumption, fuel and timber for more than 25 or 30 years, there is no need of alarm. Coal of good quality, and in inexhaustible quantities, is within our reach, and can be afforded here at a very reasonable price.

It has been the policy of this State to extend her Canals toward the deposits of coal in Pennsylvania, and that State is also constructing Canals and Railroads in this direction, and up to her line. In a few years, various avenues through the Chemung Canal, and Williamsport and Blossburg Railroads, will be opened, affording to us supplies of coal, sufficient for our consumption, even if our woods were entirely exhausted.

With a view of showing the quantity of this coal at one point, the following extracts from a Survey of the Coal region near Blossburg, made by Dr. Taylor, a scientific Mineralogist, are submitted:

#### *Estimated Supply.*

"Before dismissing the important subject of Coal, it were well to offer, in this place, some approach to an estimate of the quantity capable of being worked within this district, and of which the entire bulk is accessible by means of the projected railroad, and by the numerous lateral branches which may hereafter proceed from it.

"Leaving out the remoter positions where Coal and Iron Ore have been observed, we will confine our estimate within the circuit of a few miles. There now exists sufficient evidence for concluding that twenty thousand acres, surrounding Blossburg, are within the denomination of Coal lands. These are intersected longitudinally by the main valley of the Tioga, and transversely by numerous deep ravines, descending to that river, at almost every point of the compass. This area is equal to about 32½ square miles, comprised within an oblong or oval, five miles broad by six and a half miles long. We will compute on ten thousand acres, or one-half only, as necessary or available to the intended project. Enough has now been ascertained of the geological structure of the country, to show that no serious impediments to practical operations, can be contemplated from the prevailing inclination of the strata. On the contrary, it is well known that such a depression is as likely to facilitate as to retard an extensive system of mining, where the sites for commencing these operations, are judiciously selected.

"But to escape all risk of exaggeration from such a cause, and to allow for vacant and inaccessible ground, we will admit one-half of this latter quantity to be under those circumstances, and the remainder will be that area which can furnish its mineral products upon the cheapest and simplest method of working. We have then to calculate on five thousand acres only. It has been shown that the gross contents of an acre of Coal land in Coal Run and Bear Creek, supposing every vein to be worked, and to be no thicker than it shows in the out-crop, is more than thirty thousand tons; or 23,500 tons clear produce, deducting one-fourth for waste and obstacles. In order to reduce it yet further within the limits of effective operations, we will reduce this amount below one-half, and calculate only upon ten thousand tons of coal per acre, on an average. We will assume that one hundred thousand tons of coal per annum, will be the ultimate demand. Then, with these data before us, the result is, that ten acres per annum would furnish the requisite supply of coal; and that, on the same ratio, it would be five hundred years before that area was exhausted.

"This statement will scarcely appear unreasonable, when it is considered as has been previously shown, that the clear produce of twelve acres from one vein

only, namely, that at Morris's Run, will supply the same amount; being of sufficient capacity to furnish an article of tonnage and freight for many years, adequate to defray the interest of the entire capital invested in the proposed undertaking, and to provide a fund for the supervision, repairs, and ultimate renewal, of the whole line of railroad."

This deposit is 40 miles south from the Chemung Canal. A Company in Pennsylvania have commenced a railroad, 26 miles long, to the State line, and another Company in this State have also commenced one from the Canal to connect with the other at the State line. Both are now suspended on account of the pressure of the times. The Company in this State, have petitioned the Legislature for aid in constructing their road, and independent of the necessity of this coal to the public, it is manifest that the trade in the article will add greatly to the tolls of the Canals, especially to those of the Chemung and Cayuga and Seneca. These Canals are now unproductive, and if by the loan of a moderate amount, the construction of these roads is insured, the State will reap a benefit through the increase of tolls on these Canals, far beyond the interest upon the money. When this communication is open, coal will be afforded at such a price as it is believed, will enable the farmer near the lakes, canals or railroads, to clear nearly the whole of his land, without fear of subjecting himself to the want of fuel.

It is of great consequence to have these works completed at an early date. If it be true, that one-fourth of the country is now kept in an unproductive state, to afford a present and future supply of fuel, when there is an article equally good, so near to us, and to be had at a moderate expense, it is a matter of deep concern to the country, that this coal should be brought among us; then every one can make the trial, and elect whether he will clear his land and depend on coal, or reject it, and retain his woods. If the coal is found to answer the purpose, it is manifest that the productions of the country will be increased—the business of our lakes and canals extended, and the general wealth enlarged.

If land is valued at \$30 per acre, the man who retains 25 acres for his fuel, loses the interest on \$750 per annum; or, in other words, a capital to that amount is required to furnish the material of fuel upon which the labor of cutting and hauling is to be expended. Coal requires no labor but hauling, and is then ready for the grate. So far, coal for blacksmith's use and furnaces, is not mentioned. It is a fact, ascertained by the Agent of the Pennsylvania Company, (Mr. Dibblee, of New-York,) that blacksmiths draw this coal from the mines a distance of 60 miles, in preference to buying charcoal at four cents a bushel. In the manufacture of Salt, also, it will soon be found indispensable. Were it not for our ability



to obtain coal, the price of salt would increase, as fuel became scarcer and dearer, but having this article at uniform prices, there is no danger of salt being very dear as wood becomes scarce.

These coal deposits, so near to our country, presents a most interesting subject for reflection. Without them, a large portion of the land must always be kept in woods, for fuel. Now, nearly the whole land may be improved, and a small portion of the gain in productions will pay for the coal. We are insured a perpetual supply of salt at a cheap rate. The lakes and valleys stretch toward the coal, rendering its transportation cheap by canals and railroads. Iron, also, in inexhaustible quantities, is found by the side of the coal. Our country abounds in Plaster, which is denied to the coal and iron region. Wheat is congenial to our soil, and is not produced in large quantities near the mines; so that, while we shall take from that region their coal and iron, we shall send them our salt, plaster and bread stuffs. And thus the bounties of Providence will become equalized, while thousands of persons will find employment and maintenance in effecting the exchange. Our position creates a natural relation to the coal region, which mutual interest requires to be perfected at the earliest practicable time because the prosperity of both regions will be the immediate consequence.—*Geneva Gaz.*

#### ADAMS'S EQUIROTAL CARRIAGES.

There are at present to be seen at Tattersall's some wheel carriages constructed on a principle which seems to us to possess great advantages over the wheel carriages now in use. They are called Patent Equirotal Carriages, and are suspended on regulating bow springs.

The front wheels are as large as the hind ones. The springs are very flexible, and readily yield when the wheels are passing over obstacles. The two axles are capable of adjusting themselves by the traction of the carriage, either in parallel or radiating lines, with each other, according as the carriage advances, either on straight lines or curves; and thus the friction arising from the unequal tracking of ordinary carriages is avoided. In consequence of the frame work—technically called the "under carriage"—and, also, much of the iron work used in ordinary vehicles being dispensed with, and the springs reduced in weight one half, the total weight is materially lessened.—When turning a corner, the weight is equally poised over the two axles, as when moving in a straight line. In ordinary carriages, the weight is frequently on three wheels, with the centre of gravity nearly over the base. In consequence of the power of radiation in both axles, sufficient friction may be obtained without injury to the carriage to arrest its motion down the steepest hill, or to stop it altogether on any slope without the aid of the cumbrous drag chain and shoe.—

The driver may by backing stop his horses on a hill slope as easily as on a level. Owing to the peculiar mode of locking, the driver's seat turns with the horses, and thus he is always square behind them when turning, with his full power exerted in a straight line, instead of losing his purchase by a sideways pull. The carriages may, if required, be so fitted up that all four wheels can, at the pleasure of the driver or sitters, be deprived of their free rolling movement, and converted into drags, in case of the horses running away. By the substitution of smooth turning centres, instead of the ordinary wheel plate and perch bolt, which rattle, and by the total absence of any other moving joints, such as spring bolts and shackles, and by the springs being each composed of a single plate of steel, they are very free from noise and concussion. They are also very easy to the sitters from the peculiar construction of the springs, which permit a universal action both laterally and vertically, and also in a direction with the advancing motion of the carriage. And, by the flexible braces, the vibrating motion so frequently complained of, is entirely removed.

We have seen several of them, which are elegant in form, and we think they are likely to answer the expectations of the inventor, and be of advantage to the public. The principle on which they are constructed is applicable to railroad carriages as well as those on common roads; and by enabling the two axles to adjust themselves with each other, either in parallel or radiating lines, will allow railroads to be safely and conveniently constructed in curves of comparatively short diameter, as well as in straight lines. The principle on which this is done seems to be the total separation of the axle of the fore wheels from that of the hind ones, so that each part moves freely on its own centre, while the connection of the parts of the carriage is preserved independently of the perch or axletrees. Where the body of the coach admits of it, or when it is composed of two parts, each part may be said to have its separate pair of wheels, while the connection between the parts is established by a ball and socket-joint, which admits of free yet safe motion.—*English paper.*

#### WILFUL INJURIES TO RAIL ROADS.

We are pleased to see that the Senate of this state is disposed to pass an enactment for the severe punishment of those who are wicked enough to endanger the lives of innocent travellers, for the insignificant purpose of injuring a railroad company to the amount of a few dollars. One would suppose that no human being could be guilty of such despicable acts. But facts prove to the contrary. Last summer, when the Utica and Schenectady Company sent a train of cars through in the night, some individual or individuals removed the rails of the road near an embankment; and had not a person gone and met the cars, and told the engineer

of the circumstances no one can form an idea how many lives, would have been lost. No punishment could be too severe for men guilty of such a horrible act. It is a malicious attempt at cold blooded murder—not of the persons against whom hostility is entertained, but of innocent, inoffensive strangers.

"The committee of the whole, Mr. E. P. Livingston in the chair, took up the bill to punish wilful injuries to railroads. [The bill declares every person who shall wilfully, with malicious intent, remove, break down or destroy any part of a railroad, or embankment, &c., or place obstructions on the track, with like malicious intent, guilty of a misdemeanor, punishable by imprisonment in the state prison not exceeding—years, or in a county jail not less than one year. The bill not to apply to cases where death to a human being shall result from the commission of either of those offences. Makes the offender liable to the company, for treble damages.]—*Rochester Republican.*

#### REMINISCENCES.

The town of Newport, Rhode Island, was formerly the handsomest and most flourishing town in the United States. It has the finest harbor in the country, and seventy years ago, was the second town in the country, inferior in wealth and commerce only to Boston.

In 1769, Newport contained 11,000 inhabitants, now it has only 6,000. At that period, although the country trade of New York was greater than that of Newport, yet the latter far exceeded New York, as to foreign and domestic navigation. There were then employed at Newport, about 150 vessels in the foreign trade, and about 300 on coasting voyages. A line of London packets sailed from there, and Aaron Lopez, an eminent Jew merchant, first prosecuted the whaling business beyond the Falkland Islands, and was the owner of thirty vessels.

About 14,000 hhds. of molasses were annually imported into the town, and distilled into rum in the twenty-two distilleries then in operation at that place. The rum was sent to Africa and exchanged for slaves. Newport grew rich by the slave trade. Her merchants lived like princes, with slaves to fan them while they slept, and wait on their capricious desires when awake. A few fragments of the shattered fabric of ancient pomp still remain to show us that luxury and extravagance had taken deep hold on the habits and customs of the people of Newport. But an end cometh to all things. The present condition of some of the descendants of those rich men, furnishes a striking commentary on the folly of human expectations. The almshouse in that place is the gloomy home of many of the poor, broken and friendless descendants of men who strutted through life with all the ostentation of immense wealth.—*Newburyport Herald.*



## REPORT ON INTERNAL IMPROVEMENT.

The able report of Mr. Ruggles, on this subject, in our State Legislature, has excited universal attention and admiration. Nothing can be more gratifying than to find that able and intelligent men take so warm and active interest in this subject. We may yet see our state regain her former rank in magnificence and utility of internal improvement.

The report is on our table and shall appear as early as possible.

## CLEANING WINDOWS.

The best and most effectual method of cleaning windows, looking-glasses, &c. is stated by M. Fromont, a French philosopher, to be, first, to wash the window, and then, when it is nearly dry, to rub it with blotting paper.

## List of Subscribers who have paid since the 23d Jan. 1838.

Gcv. Duncan, of Illinois,	to January 1, 1838.
J. T. Watson, city,	Oct. 1, 1837
C. A. Burton, Galena, Ill.,	Jan. 1, 1838
L. A. Sykes, Newark,	March 8, 1838
Rufus King, Albany,	Jan. 1, 1839
John Johnson, Burlington, Vt.,	do. 1, 1839
J. W. Smith, N. London,	do. 1, 1839
P. H. Green, Batavia,	do. 1, 1838
John C. Linton, Dover Mills, Va.,	do. 1, 1839
Archduke John, of Austria,	do. 1, 1839
C. E. Detmold, city,	do. 1, 1839
G. W. Long, New Orleans,	Oct. 1, 1838
N. J. Railroad Co., city,	Jan. 1, 1839
G. F. Winslow, Troy,	July 1, 1838
George Lafferty, Hickesford, Va.,	Jan. 1, 1839
Edw. F. Doyle, Grahamville, Pa.,	July 1, 1838
Henry Anthony, city,	Jan. 1, 1839
J. B. Jarvis, do.,	do. 1, 1839
H. B. Lane, Covington, Geo.	Jan. 1, 1839.

Volume Six will be completed as speedily as possible. The next, or Volume for 1838, will be published in a more convenient form for preservation.

Subscribers who desire to be supplied with missing numbers, will do well to apply for them soon. We shall always take pleasure in furnishing them if we have them to spare.

Particular attention will be given to the procuring of all kinds of Instruments required by Engineers.—Orders must be accompanied with the necessary funds or city acceptances.

**For Sale.**—A Level, made to order by Brown & Hunt, and in first rate order. Enquire at this office.

## SHEET LEAD, &amp;c.

THE Subscribers, Manufacturers of Sheet Lead, Lead Pipe, Red Lead and Litharge—have always an assortment in store, and for sale, at 175 Front Street, corner of Burling Slip.

## CORNELL &amp; TUCKER.

Sheet Lead and Lead Pipe for Fortifications and Engineering, Milled any thickness and size to order.

New-York, March 10, 1838.

3t.

## NOTICE TO CONTRACTORS.

Sealed proposals will be received by the undersigned, Acting Commissioner of Public Works, for the 5th Judicial Circuit, Illinois, at his office in Canton, Fulton county, on Tuesday, the 17th day of April next, until 4 o'clock, P. M. of that day, for the Grading, Bridging and Masonry of twenty-four miles of the Peoria and Warsaw Railroad; extending from Peoria, on the Illinois river, twelve miles west and from Warsaw on the Mississippi, twelve miles east.

Sealed proposals will also be received at the Engineer's office, in Quincy, Adams county, Illinois, on Monday the 23d day of April next, until 4 o'clock P. M. of that day, for the grading, bridging and masonry, of the Northern Cross Railroad, extending from Quincy to Columbus.

Plans and profiles, together with specifications of the manner of executing the work, will be exhibited at each office ten days previous to the days of letting. The portions of the above work to be put under contract are expensive, requiring a large amount of heavy excavation and embankment. They will be divided into sections of about one mile in length.

Contractors will be required to make an efficient commencement of their respective jobs within sixty days after the letting, and to have them fully completed on or before the first day of August, 1839.

Recommendations will be expected in all cases in which the contractor is not personally known to the undersigned, or the associate commissioner attending the letting.

The country is dry, healthy, and well settled; provisions are easily procured, and as the above with the other works recently let, and now offered by the different commissioners of the State to be let next spring, are the commencement of the extensive system of internal improvements projected by the State of Illinois, it is worthy of the attention of contractors abroad.

J. WRIGHT,  
Acting Commissioner, 5th Judicial Circuit.  
Canton, Ill., Jan. 9, 1838.

## SEALED PROPOSALS

FOR constructing a stone Lock, and three-fourths of a mile of Canal along the Lower Rapids of Rock River, will be received on the 12th of May next, at the town of Dixon, Ogle county, Ill.

The plans and specifications of the work may be examined on the day of letting.

Certificates of character and qualifications from well known authority will be required, unless the contractor is personally known to the Commissioner or the Engineer.

JAMES W. STEPHENSON,

Acting Commissioner.

N. B. Proposals for improving Upper Rapids will be received shortly after this letting, of which due notice will be given.  
Feb. 9, 1838. 6w

## NOTICE TO CONTRACTORS.

THE undersigned, Acting Commissioner of the Board of Public Works of the State of Illinois for the 6th Judicial Circuit, will receive at his office, in Galena, Jo Davies's county, Ill., on the 19th day of May, 1838, until 4 o'clock P. M., Sealed Proposals for the Grading, Masonry, and Bridges of twenty miles of the Central Railroad, extending from Galena Southerly. This line embraces a large portion of heavy work, deserving the attention of skillful and competent contractors. Satisfactory recommendations will be required from contractors not personally known to the Commissioner or Engineer. Plans and profiles of the line, and drawings of the different constructions will be exhibited, and all necessary information afforded, on application to the undersigned, or to the Engineer of the work, for ten days previous to the letting. The work will be required to be commenced within forty days, and completed within eighteen months from the time of letting.

JAMES W. STEVENSON,  
Acting Commissioner for 6th Judicial Circuit.  
Galena, Feb. 9, 1838. 6w

## NOTICE TO CONTRACTORS.

## James River and Kanawha Improvement.

PROPOSALS will be received at the office of the Company, in the city of Richmond, until the 9th day of April next, for the construction of all the farm bridges between Richmond and Maiden's Adenture, and the dams across James River, situated respectively at the mouth of Tye River, Joshua's Falls, and Seven Islands.

The two first of the above named dams will be about six hundred feet long, and about 14 feet high. The foundations are of rock.

The depth of water in the summer season is generally from one to four feet.

The contractors will be required, by the terms of their agreements, to complete the dams in the course of the next summer and fall; and with a view to this object, proposals are only invited from men who have the necessary skill and ability to accomplish the labor.

The wooden guard-llocks at the sites of the Tye River and Joshua's Falls dams, will be offered for contract at the same time.

The plans and specifications may be seen at the office of the subscriber in this city.

CHARLES ELLET, Jr.

Chief Engineer James River & Kanawha Company.

Richmond, 10th March, 1838.—tap 6 April.

## TO CONTRACTORS.

PROPOSALS will be received at the Office of the Engineer of the Central Railroad of Georgia, in Savannah, from the 1st to the 5th of April, for grading 13½ miles of this road, extending to a point 83 miles from this city. The work will be divided into sections of a suitable length. The country is remarkably healthy, and the work being heavy, offers great inducements to Contractors. Profiles will be ready for examination after 1st of April.

ALSO,

The laying of the superstructure of 7 sections from the 6th to the 12th, both inclusive; a distance of 19 miles—the Company furnishing all materials—any distance not less than 6 miles, may be proposed for. S. O. REYNOLDS, Chief Engineer.  
Savannah, Ga. March 1, 1838. Ap 5

## NOTICE TO CONTRACTORS.

Sealed Proposals will be received by the undersigned, acting commissioner of the Board of Public Works of the State of Illinois, for the 7th Judicial circuit at Peru, LaSalle county, Illinois, on Monday, the 25th day of June next, until the hour of four o'clock P. M. of said day, for the clearing, grubbing, grading, masonry and bridging of twenty-two miles of the Central Railroad, extending from the Illinois River southerly eleven miles, also from said river northerly eleven miles.

The work will be divided into sections of convenient length, and most of them will embrace jobs worthy the attention of competent and experienced contractors, among which will be several viaducts, heavy embankments on the Illinois river bottom, and also some deep cuttings and heavy embankments in rising the bluffs.

Plans and profiles of the lines, and drawings of the different constructions upon it, together with specifications of the manner of executing the work will be exhibited at the Commissioner's office at Peru ten days previous to the day of letting, and all other information in relation to the work will be given on application at the above office.

Contractors will be required to make an efficient commencement of their jobs within 30 days after the letting, and to have them fully completed on or before the first day of September, 1839.

Recommendations will be expected in all cases in which the contractors are not personally known to the undersigned or the other associate Commissioners attending the letting.

For the information of contractors abroad, it is mentioned that this line of road crosses the Illinois river at the head of steamboat navigation, and termination of the Michigan and Illinois Canal, and is situated in the midst of a most rich and fertile country abounding in supplies of all kinds that can be desired by the contractor.

Proposals for any of the above works may be directed to the undersigned at any time previous to the hour of letting, endorsed proposals for work to be let on the 25th of June, 1838, and they will be duly considered.

E. PECK.

Acting Com. for 7th Judicial Circuit.  
Chicago, Ill., Feb. 12, 1838. m19 tje10



## AGENCY.

The Subscriber offers his services as Agent, to procure Machinery for Mills, Steam Engines, Locomotives, Printing Machines, Presses, Types and Fixtures.

He will give prompt attention to all orders entrusted to him for execution; and pledges himself to those who may employ him, that no effort on his part shall be wanting to procure the best articles to be had in the city—and to give satisfaction.

He will also employ Millwrights and Engineers, to erect Mills, and put the Engines and Machinery in operation.

Orders accompanied with the necessary funds, or satisfactory city acceptances, should be addressed to D. K. MINOR, 30 Wall-st. N. Y.

## FRAME BRIDGES AGAIN.

The subscriber will build Frame Bridges in any part of the United States, Maryland not excepted, and will extend them to as long a span, and warrant them to be as strong, durable, and cheap as those made by any other method.

Having no patent right, he requires no agents. A large number of bridges of his construction are to be seen. Young gentlemen, who wish, can be instructed in the true mathematical principles of building bridges, and the application of the same to practice.

JOHN JOHNSON.

Burlington, Vt, Jan. 1838

F14tf

## THE NEWCASTLE MANUFACTURING COMPANY

Continues to furnish at the works situated in the town of Newcastle, Delaware, Locomotives and other Steam Engines—Jack Screws, Wrought-iron work and Brass and Iron Castings, of all kinds connected with Steamboats, Railroads, &c. Mill Gearing of every description; Cast Wheels (chilled) of any pattern and size, with axles fitted, also with wrought Tires; Springs, Boxes and Bolts for Cars; Driving and other Wheels for Locomotives.

The works being on an extensive Scale, all orders will be executed with promptness and dispatch. Communications addressed to Mr. William St. Dobb, Superintendent, will meet with immediate attention.

ANDREW C. GRAY,

President of the Newcastle Manufacturing Co  
Newcastle, Del. March 6, 1838.

1y.

## NEW ARRANGEMENT.

ROPE FOR INCLINED PLANES OF RAILROADS.

WE the subscribers have formed a co-partnership under the style and firm of Folger & Coleman, for the manufacturing and selling of Ropes for inclined planes of railroads, and for other uses, offer to supply ropes for inclined planes, of any length required without splice, at short notice, the manufacturing of cordage, heretofore carried on by S. S. Durfee & Co., will be done by the new firm, the same superintendent and machinery are employed by the new firm that were employed by S. S. Durfee & Co. All orders will be properly attended to, and ropes will be shipped to any port in the United States.

12th month. 12th, 1836. Hudson, Columbia County, State of New-York.

ROBT. C. FOLGER.

33—tf

GEORGE COLEMAN.

## AMES' CELEBRATED SHOVELS, SPADES, &amp;c.

300 dozens Ames' superior back-strap shovels.  
150 do. do. do. plain do.  
150 do. do. do. cast-steel Shovels & Spades  
150 do. do. Gold-mining Shovels  
00 do. do. plated Spades.  
50 do. do. socket Shovels and Spades

Together with Pick Axes, Churn Drills, and Crow Bars (steel pointed), manufactured from Salisbury refined iron—for sale by the manufacturing agents,

WITHERELL, AMES &amp; CO.

No. 2 Liberty street, New-York.

BACKUS, AMES &amp; CO.

No. 8 State-street, Albany.

N. B.—Also furnished to order, Shapes of every description, made from Salisbury refined iron. v4-tf

## MACHINE WORKS OF ROGERS,

KETCHUM AND GROSVENOR, Paterson, New-Jersey. The undersigned receive orders for the following articles, manufactured by them, of the most superior description in every particular. Their works being extensive, and the number of hands employed being large, they are enabled to execute both large and small orders with promptness and dispatch.

## RAILROAD WORK.

Locomotive Steam-Engines and Tenders; Driving and other Locomotive Wheels, Axles Springs and Flange Tires; Car Wheels of cast iron, from a variety of patterns, and Chills; Car Wheels of cast iron, with wrought Tires; Axles of best American refined iron; Springs; Boxes and Bolts for Cars.

COTTON, WOOL, & FLAX MACHINERY. Of all descriptions and of the most improved patterns, Style, and Workmanship.

Mill Gearing and Millwright work generally; Hydraulic and other Presses; Press Screws; Calenders; Lathes and Tools of all kinds; Iron and Brass Castings of all descriptions.

ROGERS, KETCHUM & GROSVENOR,  
Paterson, N. J. or 60 Wall-st. New-York  
51tf

## FRAME BRIDGES.

THE undersigned, General Agent of Col. S. H. LONG, to build Bridges, or vend the right to others to build on his Patent Plan, would respectfully inform Railroad and Bridge Corporations, that he is prepared to make contracts to build, and furnish all materials for superstructures of the kind, in any part of the United States, (Maryland excepted.)

Bridges on the above plan are to be seen at the following localities, viz. On the main road leading from Baltimore to Washington; two miles from the former place. Across the Motawamkeag river on the Military road in Maine. On the national road in Illinois, at sundry points. On the Baltimore and Susquehanna Railroad at three points. On the Hudson and Paterson Railroad in two places. On the Boston and Worcester Railroad, at several points. On the Boston and Providence Railroad, at sundry points. Across the Contoocook river at Henniker, N. H. Across the Souhegan river, at Milford, N. H. Across the Connecticut river, at Hancock, N. H. Across the Androscoggin river, at Turner Centre, Maine. Across the Kennebec river, at Waterville, Maine. Across the Genesee river, at Squakiehill, Mount Morris, N. Y. Across the White River, at Hartford, Vt. Across the Connecticut River at Lebanon, N. H. Across the mouth of the Broken Straw Creek, Penn. Across the mouth of the Cataragus Creek, N. Y. A Railroad Bridge diagonally across the Erie Canal, in the City of Rochester, N. Y. A Railroad Bridge at Upper Still Water, Orono, Maine. This Bridge is 500 feet in length; one of the spans is over 200 feet. It is probably the firmest wooden bridge ever built in America.

Notwithstanding his present engagements to build between twenty and thirty Railroad Bridges, and several common bridges, several of which are now in progress of construction, the subscriber will promptly attend to business of the kind to much greater extent and on liberal terms.

MOSES LONG,

Rochester, Jan. 19th, 1837.

4-y

## STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads,

No. 264 Elizabeth street, near Bleecker street,

NEW-YORK.

RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on the New-York and Harlaem Railroad, now in operation.

## ROACH &amp; WARNER,

Manufacturers of OPTICAL, MATHEMATICAL AND PHILOSOPHICAL INSTRUMENTS, 293 Broadway, New-York, will keep constantly on hand a large and general assortment of Instruments in their line.

Wholesale Dealers and Country Merchants supplied with SURVEYING COMPASSES, BAROMETERS, THERMOMETERS, &c. &c. of their own manufacture, warranted accurate, and at lower prices than can be had at any other establishment.

Instruments made to order and repaired.

1y-14

## RAILWAY IRON, LOCOMOTIVES,

&amp;c. &amp;c.

THE subscribers offer the following articles for sale:—

Railway Iron, flat bars; with countersunk holes and mitred joints,

350 tons 2by 15 ft in length, weighing 4 lbs

280 " 2 " 1 " " " 3 1/2 "

70 " 1 1/2 " 1 " " " 2 1/2 "

80 " 1 1/2 " 1 " " " 1 1/2 "

90 " 1 " 1 " " " 1 " "

with Spikes and Splicing Plates adapted thereto To be sold free of duty to State governments, or incorporated companies.

Orders for Pennsylvania Boiler Iron executed.

Rail Road Car and Locomotive Engine Tires, wrought and turned or unturned, ready to be fitted on the wheels, viz 30, 33, 36, 42, 44, 54, and 60 inches diameter.

E. V. Patent Chain Cable Bolts for Railway Car axles, in lengths of 12 feet 6 inches, to 13 feet 2 1/2, 3, 3 1/2, 3 3/4, 3 1/2, and 5 1/2 inches diameter.

Chains for Inclined Planes, short and stay links, manufactured from the E. V. Cable Bolts, and proved at the greatest strain.

India Rubber Rope for Inclined Planes, made from New Zealand Wax.

Also, Patent Hemp Cordage for Inclined Planes, and Canal Towing Lines.

Patent Felt for placing between the iron chair and stone block of Edge Railways.

Every description of Railway Iron, as well as Locomotive Engines, imported at the shortest notice, by the agency of one of our partners, who resides in England for this purpose.

A highly respectable American Engineer resides in England for the purpose of inspecting all Locomotives, Machinery, Railway Iron, &c. ordered through us.

A. &amp; G. RALSTEN &amp; CO.,

Philadelphia, No. 4 South Front-st.

28 tf

## ARCHIMEDES WORKS.

(100 North Moore-street, N. Y.)

THE undersigned beg leave to inform the proprietors of Rail Roads, that they are prepared to furnish all kinds of Machinery for Rail Roads, Locomotive Engines of any size, Car Wheels, such as are now in successful operation on the Camden and Amboy Rail Road, none of which have failed.—Castings of all kinds; Wheels, Axles and Boxes, furnished at the shortest notice.

H. R. DUNHAM &amp; CO.

New York, February 12th, 1836.

4-ytt

## PATENT RAILROAD, SHIP AND BOAT SPIKES.

\*. The Troy Iron and Nail Factory keeps constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches manufactured by the subscriber's Patent Machinery, which after five years successful operation, and now almost universal use in the United States, (as well as England, where the subscriber obtained a patent) are found superior to any yet ever offered in market.

Railroad companies may be supplied with Spikes having countersink heads suitable to the holes in iron rails, to any amount and on short notice. Almost all the Railroads now in progress in the United States are fastened with Spikes made at the above-named factory—for which purpose they are found invaluable, as their adhesion is more than double any common Spikes made by the hammer.

\*. All orders directed to the Agent, Troy, N. Y. will be punctually attended to.

HENRY BURDEN, Agent.

Troy, N. Y., July, 1831.

\*. Spikes are kept for sale, at factory prices, by 1 & J. Townsend, Albany, and the principal Iron Merchants in Albany and Troy; J. I. Brower, 222 Water-street, New-York; A. M. Jones, Philadelphia; T. Janviers, Baltimore; Degrand & Smith, Boston.

P. S.—Railroad companies would do well to forward their orders as early as practicable, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand for his Spikes.

1123am

H. BURDEN.

G. Mitchell, Printer, 265 Bowery, N. Y.



